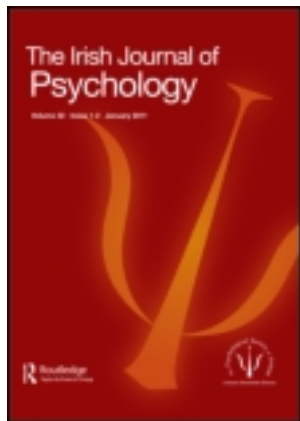


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## Revisiting Eysenck's personality dimensions and gender orientation

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Previous research has been unable to establish consistent relationships between personality and gender orientation across studies, in particular how femininity relates to personality. A sample of 583 university students completed the Eysenck Personality Questionnaire Revised-Abbreviated (Francis, Brown, & Philipchalk, 1992) and the Personal Attributes Questionnaire (Spence, Helmreich, & Stapp, 1974, 1975). Results indicated that females scored significantly higher on femininity, extraversion, and the lie scale, and males scored significantly higher on masculinity and psychoticism. Correlation analyses supported the majority of previous studies that had found significant positive associations between masculinity and extraversion, and significant negative associations between masculinity and neuroticism, for both males and females, and significant negative associations between femininity and psychoticism for females.

### Introduction

A small body of research has examined the relationship between Eysenck's dimensional model of personality and gender orientation, in particular, the way that male and female scores on commonly used measures of these constructs differ, and the way that masculinity and femininity are located differentially within Eysenck's dimensional model of personality (Arrindell et al., 1997; Francis & Wilcox, 1998, 1999; Kimlicka, Sheppard, Sheppard, & Wakefield, 1988; Nagoshi, Pitts, & Nakata, 1993; Williams, 1982). These studies have used either the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975) or the Revised Eysenck Personality Questionnaire-Short Form (EPQR-S; Eysenck, Eysenck, & Barrett, 1985) as a measure of personality, and the Bem Sex Role Inventory (BSRI; Bem, 1974, 1981) as a measure of gender orientation. There is some consensus regarding the manner in which the constructs of personality and gender orientation relate to each other. For example, all six previous studies found a positive relationship between masculinity and extraversion for both males and females, whilst three of the six (Arrindell et al., 1997; Francis & Wilcox, 1998; Nagoshi et al., 1993) found a negative relationship

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between masculinity and neuroticism for males, and all but Williams (1982) found the same relationship for females (see Table 3). Additionally, all studies with the exception of Williams (1982) found a negative relationship between femininity and psychoticism for females. There is also consistency regarding the lack of significant associations between masculinity and psychoticism for males, and between masculinity and the lie scale for females. However, a degree of ambiguity remains regarding other associations between personality and gender orientation, in particular as regards femininity and its personality correlates. For example, whilst Kimlicka et al. (1988) and Arrindell et al. (1997) found a negative relationship between femininity and neuroticism for females, Francis and Wilcox (1998) and Williams (1982) did not find any significant relationship between these variables, whilst Francis and Wilcox (1999) and Nagoshi et al. (1993) found a positive relationship. Additionally, three of the six studies (Arrindell et al., 1997; Nagoshi et al., 1993; Williams, 1982) found a negative association between femininity and psychoticism in males, an association not observed by Kimlicka et al. (1988), or Francis and Wilcox (1998, 1999) (see Table 3). Arrindell et al. (1997), using a Spanish sample, are the only researchers to have found significant positive associations between femininity and extraversion, and between femininity and the lie scale for their male sample using a shortened version of the BSRI. It is therefore clear that previous research has thus far been unable to establish consistent relationships between personality and gender orientation, in particular how femininity relates to personality.

The common features in these six previous studies are the use of some form of the EPQ as a measure of personality, and the BSRI as a measure of gender orientation. To date, no studies have used any alternate measure of gender orientation other than the BSRI to examine the relationship between these two constructs. An alternative measure of gender orientation is the Personal Attributes Questionnaire (PAQ; Spence, Helmreich, & Stapp, 1974, 1975). This measure, which was developed at the same time as, though independently of, the BSRI, assesses masculinity and femininity in a similar manner to the BSRI by asking respondents to rate themselves on socially desirable 'instrumental' (masculine) and 'expressive' (feminine) sex-typed personality traits. The PAQ has not only been shown to be an adequate replacement for the BSRI (see Lenney, 1991), but also boasts masculinity and femininity subscales which are unidimensional, homogeneous, and factorially pure (Spence, 1985). Whilst the masculinity subscales of the PAQ and the BSRI have consistently proven to be strongly associated, with correlations ranging from 0.72 to 0.84 (Spence, 1991), levels of associations found between the PAQ and BSRI femininity subscales typically have been lower (ranging from 0.52 to 0.71: Spence, 1991). Lower correlations between the PAQ and BSRI femininity subscales are believed to be the result of the presence of a number of socially undesirable items in the femininity subscale of the BSRI (Spence, 1991). Additionally, factor analysis of the two instruments is revealing, with the respective items of the masculinity and femininity subscales of the PAQ clearly loading onto two orthogonal factors thus confirming the unidimensionality and homogeneity of the two subscales espoused by the authors of the instrument, whilst factor analyses of the BSRI (e.g., Antill & Russell, 1982; Kimlicka, Wakefield, & Friedman, 1980; Pedhazur & Tetenbaum, 1979) have consistently found multiple factors, most commonly, a four-factor solution. Whilst Bem (1979) argued that this lack of factorial purity of the BSRI supported her theoretical contention that gender

orientation is a multifactorial construct, and her measure consequently designed to be more heterogeneous than the PAQ, she subsequently conceded that both subscales of the measure should only include socially desirable characteristics (as is the case with the PAQ). Bem's (1979) revisions to the long version of the BSRI, removing any socially undesirable items, all of which appeared in the femininity subscale, resulted in a 30-item short form comprised entirely of socially desirable items, which, when subjected to factor analysis, loaded onto two clear orthogonal factors, with masculinity and femininity items loading onto their respective factors (Martin & Ramanaiah, 1988). Correlations between the femininity subscales of the PAQ and the short form of the BSRI have been shown to be stronger than for the long version of the BSRI (0.75: Lubinski, Tellegen, & Butcher, 1983). However, criticisms have since arisen regarding performance of the short form BSRI (e.g., Frable & Bem, 1985; Gruber & Powers, 1982; McPherson & Spetrino, 1983), and Bem herself has discontinued use of this measure (Frable & Bem, 1985). Given concerns regarding the femininity subscale of the BSRI, and the fact that the majority of inconsistencies noted in previous research have involved associations between personality and the femininity subscale, and that there are reservations about the psychometric properties of the short form of the BSRI, there is a clear rationale for extending the present literature by examining associations between these two constructs employing a gender orientation instrument that is proven to be psychometrically sound, particularly in relation to its femininity subscale. The aim of this research therefore is to elucidate the relationship between personality and gender orientation, and to extend the literature, by replicating previous research using the EPQR-A as a measure of personality, and the PAQ as an alternative measure of gender orientation.

## Method

### Participants

The sample comprised 583 university students from the Republic of Ireland and Northern Ireland aged 17 to 58 years (M: 27.08; SD: 9.66), of which 397 were females aged 17 to 58 years (M: 27.00; SD: 9.76) (two female participants did not indicate age), and 184 were males aged 18 to 55 years (M: 27.24; SD: 9.46).

### Materials

Participants were asked for their age and sex, and then completed a questionnaire booklet containing the following measures:

*Gender orientation:* The Personal Attributes Questionnaire (PAQ; Spence, Helmreich, & Stapp, 1974, 1975) is a 24-item self-report measure of gender orientation with each item representing a different sex-typed and socially desirable personality characteristic (e.g., aggressiveness, independence, self-confidence) presented in a five-point bipolar continuum, with participants being asked to choose a letter representative of their position on each continuum (e.g., Item 1 ranges from A [0] = 'not at all aggressive' to E [4] = 'very aggressive'). The 24 items of the PAQ include a masculinity subscale comprising eight male valued personality characteristics (e.g., Item 2: 'Not at all independent' to 'Very independent'), a femininity subscale comprising eight female valued personality characteristics (e.g., Item 15: 'Not at all aware of others' feelings' to 'Very aware of others'

feelings'), and a masculine-feminine subscale comprising eight sex specific personality characteristics (e.g., Item 11: 'Very home oriented' to 'Very worldly'; Item 18: 'Never cries' to 'Cries very easily'). Scores for each item may range from 0 to 4, with higher scores on the masculine and masculine-feminine scale items being representative of extreme masculinity, and higher scores on the feminine scale items being representative of extreme femininity. Scores for each of the three scales may range from 0 to 32. Spence and Helmreich (1978) reported satisfactory Cronbach alpha values of 0.85 (masculine), 0.82 (feminine), and 0.78 (masculine/feminine) from a sample of male and female participants. Helmreich, Spence, and Wilhelm (1981) provided further evidence of the reliability of the PAQ, and reported alpha values of 0.73 (masculine), 0.73 (feminine), and 0.65 (masculine/feminine) among a sample of 1585 female college students, and 0.76 (masculine), 0.76 (feminine), and 0.61 (masculine/feminine) among a sample of 1251 male students.

*Personality:* The Eysenck Personality Questionnaire Revised – Abbreviated (EPQR-A; Francis, Brown, & Philipchalk, 1992) is a 24-item measure of personality abbreviated from the 48-item EPQR-S (Eysenck et al., 1985) that consists of four scales, with six items in each scale. Three scales measure the personality dimensions of extraversion (e.g., Item 20: 'Are you mostly quiet when you are with other people?' [reverse scored]), neuroticism (e.g., Item 1: 'Does your mood often go up and down?'), and psychoticism (e.g., Item 6: 'Would you take drugs which may have strange or dangerous effects?'). The fourth scale, the lie scale, measures social desirability (e.g., Item 17: 'Have you ever cheated at a game?' [reverse scored]). Participants use a forced choice response format (yes = 1; no = 0). Scores range from 0 to 6 on each scale, with higher scores representing higher degrees of the construct being measured by each scale. In the development of the 24-item scale, Francis et al. (1992) tested 685 undergraduate students from England, Canada, USA, and Australia. Reported alpha values ranged from 0.74 to 0.84 for the extraversion scale, 0.70 to 0.77 for the neuroticism scale, 0.59 to 0.65 for the lie scale, and 0.33 to 0.52 for the psychoticism scale. These values are consistent with a measure of this length.

### **Procedure**

Questionnaire booklets containing the measures were completed during lecture time. Participation was voluntary, and no credit was given for taking part in the study.

### **Results**

Cronbach's (Cronbach, 1951) alpha coefficients for the subscales of the EPQR-A and the PAQ for males and females indicated satisfactory reliabilities at or above 0.70 for all subscales (Kline, 2000), with the exception of the psychoticism and lie scale subscales of the EPQR-A for both sexes (see Table 1) which, though below the recommendations of Kline, are consistent with previous findings (Francis et al., 1992). Mean scores and t-test analyses indicated that females scored significantly higher on femininity, extraversion, and the lie scale while males scored significantly higher on masculinity and psychoticism (see Table 1).

Correlations between gender orientation and personality indicated significant positive associations between masculinity and extraversion, masculinity and femininity, femininity and the lie scale, and femininity and extraversion, and significant negative associations

Table 1. Means, standard deviations, alpha coefficients, and t-values by sex.

|              | Male  |      |          | Female |      |          | t        |
|--------------|-------|------|----------|--------|------|----------|----------|
|              | M     | SD   | $\alpha$ | M      | SD   | $\alpha$ |          |
| PAQ          |       |      |          |        |      |          |          |
| Masculinity  | 20.51 | 4.18 | 0.68     | 19.02  | 4.33 | 0.70     | 3.90***  |
| Femininity   | 21.86 | 4.08 | 0.75     | 24.07  | 3.97 | 0.76     | -6.21*** |
| EPQR-A       |       |      |          |        |      |          |          |
| Extraversion | 3.79  | 2.03 | 0.81     | 4.25   | 2.04 | 0.86     | -2.50*   |
| Neuroticism  | 3.19  | 1.99 | 0.77     | 3.44   | 1.80 | 0.72     | -1.51    |
| Psychoticism | 2.30  | 1.34 | 0.38     | 1.69   | 1.30 | 0.48     | 5.22***  |
| Lie scale    | 2.02  | 1.53 | 0.55     | 2.47   | 1.68 | 0.61     | -3.07**  |

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

Table 2. Correlations between dimensions of the PAQ and the EPQR-A by sex.

|                       | Lie Scale | Psychoticism | Neuroticism | Extraversion | Femininity |
|-----------------------|-----------|--------------|-------------|--------------|------------|
| <b>Male</b> (n=184)   |           |              |             |              |            |
| Masculinity           | 0.04      | 0.07         | -0.35**     | 0.31**       | 0.24**     |
| Femininity            | 0.20**    | -0.11        | 0.01        | 0.19**       | -          |
| Extraversion          | -0.14     | 0.22**       | -0.28**     | -            |            |
| Neuroticism           | 0.02      | -0.08        | -           |              |            |
| Psychoticism          | -0.00     | -            |             |              |            |
| <b>Female</b> (n=399) |           |              |             |              |            |
| Masculinity           | 0.05      | 0.06         | -0.42***    | 0.37***      | 0.06       |
| Femininity            | 0.12*     | -0.11*       | 0.09        | 0.20***      | -          |
| Extraversion          | -0.17**   | 0.04         | -0.17**     | -            |            |
| Neuroticism           | -0.05     | -0.16**      | -           |              |            |
| Psychoticism          | -0.11*    | -            |             |              |            |

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

between masculinity and neuroticism, for the male sample. There were significant positive associations between masculinity and extraversion, femininity and the lie scale, and femininity and extraversion, and significant negative associations between masculinity and neuroticism, and femininity and psychoticism, for the female sample (see Table 2).

### Discussion

The aim of this study was to re-examine the relationship between personality and gender orientation using the PAQ as an alternate measure of the latter construct to previous studies in the literature. Results indicated that females scored significantly higher on femininity, extraversion, and the lie scale, and males scored significantly higher on masculinity and psychoticism. Correlational analyses for males and females indicated support for previous research. For example, the relationship between masculinity and neuroticism (negative), and masculinity and extraversion (positive), are consistent for males and females in this sample, and support the findings of the majority of previous studies in this area regarding masculinity and stable extraversion. Additionally, the association between femininity and extraversion for females in this sample supports both Arrindell et al. (1997) and

Table 30. Key relationships between gender orientation and personality found in this and previous research.

|         | Williams (1982)<br>N = 140<br>(70 Ms; 70 Fs) | Kimlicka et al0.<br>(1988)<br>N = 217<br>(71 Ms; 146 Fs) | Nagoshi et al0.<br>(1993)<br>N = 411<br>(135 Ms; 276 Fs) | Arrindell et al0.<br>(1997)<br>N = 924<br>(423 Ms; 501<br>Fs) | Francis &<br>Wilcox (1998)<br>N = 179<br>(86 Ms; 93 Fs) | Francis &<br>Wilcox (1999)<br>N = 233<br>(All Fs) | Present study<br>N = 583<br>(184 Ms; 399 Fs) |
|---------|--|--|--|---|---|---|--|
| Males   |  |  |  |   |   |   |  |
| M+F     |  |  |  |   |   |   | 0.24**                                       |
| Females |  |  | -0.14*   |   |   |   |  |
| M+F     |  |  |  |   |   |   |  |
| Males   | 0.49**                                       | 0.48***  | 0.52***  | 0.35***   | 0.55***   |   | 0.31**                                       |
| M+E     |  |  |  |   |   |   |  |
| Females | 0.52**                                       | 0.50***  | 0.42***  | 0.47***   | 0.54***   | 0.54***   | 0.37***                                      |
| Males   |  |  |  | 0.20***   |   |   | 0.19**                                       |
| F+E     |  | 0.27***  |  | 0.20***   |   |   | 0.20***                                      |
| Females |  |  | -0.26**  | -0.15***  | -0.24*  |   | -0.35**                                      |
| Males   |  |  | -0.21***   | -0.10**   | -0.24*  | -0.23***  | -0.42***                                     |
| Females |  | -0.26***   |  |   |   |   |  |
| M+N     |  |  |  |   |   |   |  |
| Males   | 0.30*  | -0.16*   | 0.14*  | -0.10**   |   | 0.18*   |  |
| Females |  |  |  |   |   |   |  |
| Males   |  |  |  |   |   |   |  |
| M+P     |  |  |  |   |   |   |  |
| Females |  |  |  | 0.26***   |   | 0.24***   |  |
| Males   | -0.35**                                      |  | -0.34***   | -0.24***  |   |   |  |
| Females |  | -0.25***   | -0.26***   | -0.15***  | -0.27**   | -0.40***  | -0.11*                                       |
| Males   |  |  |  |   |   |   |  |
| M+LS    | 0.40**                                       |  |  |   |   |   |  |
| Females |  |  |  |   |   |   |  |
| Males   |  |  |  | 0.19***   |   |   | 0.20**                                       |
| Females |  | 0.24**   |  | 0.17***   | 0.36***   | 0.23***   | 0.12*  |

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ 

M = Masculinity subscale; F = Femininity subscale; E = Extraversion subscale; N = Neuroticism subscale; P = Psychoticism subscale; LS = Lie Scale subscale.

Kimlicka et al. (1988); the association between femininity and neuroticism for females in this sample supports Arrindell et al. (1997), Kimlicka et al. (1988), Nagoshi et al. (1993), and Francis and Wilcox (1999), though the directionality of the association among studies varies; and the association between femininity and the lie scale for females in this sample supports Arrindell et al. (1997), Kimlicka et al. (1988), and Francis and Wilcox (1998, 1999). However, a finding that was unique to the present research was evident in the male sample with regard to an association between femininity and masculinity, and thus warrants discussion. Additionally, the findings of significant positive associations between femininity and extraversion, and between femininity and the lie scale for the male sample, though comparable with one previous study (Arrindell et al., 1997), are also worthy of comment.

Though the significant positive association found between masculinity and femininity for males in the present research is inconsistent with any of the previous studies in this area, and would seem to contradict the position of both Spence et al. (1974, 1975) and Bem (1974, 1981) regarding the orthogonal nature of masculinity and femininity and the independence of the masculinity and femininity subscales of both the PAQ and the BSRI, this is not an unprecedented finding in the wider research area. In the development of the PAQ, Spence and Helmreich (1978) reported a correlation of 0.22 ( $p < 0.05$ ) for males on the masculinity and femininity subscales. Additionally, Bem (1974) in her normative samples, Liberman and Goa (1986), and Arnold and Bye (1989) obtained small but significant associations between masculinity and femininity using the BSRI. The general consensus therefore from key researchers in gender orientation measurement (e.g., Bem, 1974; Spence, 1984) would seem to be that such weak associations were insufficient to undermine the argument that these constructs are independent of each other.

Regarding the associations found for males in the present study between femininity and extraversion, and femininity and the lie scale, it is interesting to note that these results are consistent with only one previous study, Arrindell et al. (1997), a study which used the short form of the BSRI, a version shown to have stronger correlations with the PAQ, especially as regards the femininity subscale. It is therefore not surprising that overall results in the present research most closely mirror those of the Arrindell et al. (1997) study, and support the hypothesis that inconsistencies in the relationship between femininity and personality noted in previous studies may result from the use of the long form of the BSRI.

The present research has provided support for much of the previous work in this area, in particular the hypothesis that masculinity and femininity are located differentially within the Eysenckian model of personality. It is also apparent that the masculinity and femininity subscales of the PAQ perform in a similar way to the BSRI with respect to the association between gender orientation and personality, though this is more evident with the short form of the BSRI. This is perhaps not surprising given the view of Spence and Helmreich (1979, 1983) that, unlike some measures, both the BSRI and the PAQ tap similar aspects of gender orientation – not so much masculinity and femininity as ‘instrumentality’ (i.e., self-assertive qualities) and ‘expressiveness’ (i.e., interpersonal qualities).

Previous research has been unable to arrive at a consensus on the relationship between femininity and personality, with there being diversity in findings between these constructs (see Table 3). Given the theoretical rationale for the use of an alternative measure of gender orientation, that is, that inconsistencies previously recorded regarding the



femininity subscale may be a reflection of the inclusion of socially undesirable items in the long version of the BSRI, anomalous findings in this research when compared with previous findings other than the Arrindell et al. (1997) study are perhaps not surprising. Alternatively, these results may suggest cross-cultural differences insofar as there may be an inherent feminine aspect to Irish and Northern Irish males that is unique to their culture, and which is being reflected in higher levels of femininity. It is of note that five of the six previous studies used samples either from Britain, Wales, or the USA, whilst the Arrindell et al. (1997) study, results of which are most like those of the present research, especially as regards relationships between personality and femininity in males, employed a Spanish sample, one of the express aims of their research being to examine cross-national differentiation in performance on measures of gender orientation and emotional well-being. Indeed, previous cross-cultural work with the BSRI has indicated that males may differ in their levels of masculinity and femininity dependent upon their culture (e.g., de Leon, 1993), and specifically, there is evidence to suggest that Irish males have lower levels of masculinity and higher levels of femininity than their American counterparts (e.g., Ryan, Dolphin, Lundberg, & Myrsten, 1987). Further replication of this research using the PAQ and the BSRI, both with Irish samples, and with samples from other cultures, is clearly necessary in order to provide clarification both on the usefulness of the PAQ femininity subscale when compared with the long and short forms of the BSRI femininity subscale, and on cross-cultural differences in levels of femininity in males.

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